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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/606,786	06/28/2000	Robert Murphy	34918.0100	6327
29906	7590	12/07/2004	EXAMINER	
INGRASSIA FISHER & LORENZ, P.C. 7150 E. CAMELBACK, STE. 325 SCOTTSDALE, AZ 85251			CHOUDHURY, AZIZUL Q	
			ART UNIT	PAPER NUMBER
			2145	

DATE MAILED: 12/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/606,786

Applicant(s)

MURPHY ET AL.

Examiner

Azizul Choudhury

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-25,42-90,93-101,105 and 107-116 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-25,42-90,93-101,105 and 107-116 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/15/02</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-20, 42-49, 51, 62-69, 75-82, 86, 89, 90, 98-101, 105 and 107-115 are rejected under 35 U.S.C. 102(b) as being anticipated by Chang (US5680547A), hereafter referenced as Chang.

3. With regards to claim 1, Chang teaches a method of remotely maintaining a client computer having a plurality of attributes, a network interface card (NIC) and a local operating system, the method comprising the steps of:

- Providing a preboot attribute determination application from the server to the client computer via the network interface card prior to said client computer loading said local operating system (Chang discloses a design that allows client machines to communicate with a server, prior to loading the operating system. This communication ensures that server management applications can run properly (column 2, lines 44-54, Chang). For such a design to work, the claimed application must be present since a check is done of the client to determine if it is booted or not);

- Determining said plurality of attributes of said client computer with the preboot attribute determination application executing on said client computer prior to said client computer loading said local operating system (As stated above, the application must be present. Since the design is for network management and the application must be present as stated above, it is inherent that the claimed steps occur);
- Receiving said plurality attributes from said client computer at a server computer (Chang discloses a design that allows client machines to communicate with a server, prior to loading the operating system. This communication ensures that server management applications can run properly (column 2, lines 44-54, Chang). For a server management application to function properly, it must have the claimed management instructions for the client machine);
- Selecting one of a plurality of management instruction set stored on said server computer for said client computer at said server computer, wherein said one of a said plurality of management instructions is selected based upon said attributes of said client computer (As stated above, Chang's design consists of a server management application. For such an application to function properly, it is inherent that the application contains the claimed management instructions, as well as selects the appropriate management instructions for each client machine. If this step did not exist, a server management application could never properly perform its task); and

- Providing said one of said plurality of management instructions from said server computer to said client computer (As stated above, Chang's design provides for communication between the server and the client machine. This communication is the means by which the server management application can manage the client machine. Hence, the communication is used to send management instructions from the server to the client as claimed) to thereby allow said client computer to execute said one of said plurality of management instruction set at said client computer prior to loading said local operating system (Chang's design consists of server management applications. For server management applications to function properly, management instructions sent by the server management applications must execute on the client machines).

4. With regards to claim 3, Chang teaches that the plurality of attributes comprise hardware attributes (Chang discloses a design that features client machines with hardware (column 4, lines 10-12, Chang). These can be accessed by the server management application of Chang's design. Since the server management application can access the client machine, some attributes of the client must be known. These attributes can comprise of hardware attributes as claimed).

5. With regards to claim 4, Chang teaches that the plurality of attributes comprise firmware attributes (Chang's design has client machines with firmware (column 4, lines

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13-15, Chang). These can be accessed by the server management application of Chang's design hence, the attributes can comprise of firmware attributes as claimed).

6. With regards to claim 5, Chang teaches that the plurality of attributes comprise DMI attributes (Chang's design has client machines with NICs to allow for interfacing with server management applications (column 4, lines 13-15, Chang). Furthermore, Chang's design consists of a hardware device attached to each client machine to permit access to the client from the desktop management software at any given time (column 2, lines 38-54, Chang). These can be accessed by the server management application of Chang's design hence, the attributes can comprise of DMI attributes as claimed).

7. With regards to claim 6, Chang teaches that the plurality of attributes comprise PCI attributes (PCI is a type of hardware and Chang's design has client machines with hardware (column 4, lines 10-12, Chang). These can be accessed by the server management application of Chang's design hence, the attributes can comprise of PCI attributes as claimed).

8. With regards to claim 7, Chang teaches that the plurality of attributes comprise SMBIOS attributes (SMBIOS is a type of BIOS. Chang's design allows for the server management application within a server to access a client's BIOS (column 2, line 48, Chang). For the server management application to access the BIOS properly, it must have some means by which to obtain the attributes of the BIOS. Since SMBIOS and

BIOS are viewed as being equivalent, the server management application must be able to obtain the SMBIOS attributes).

9. With regards to claim 8, Chang teaches that the plurality of attributes comprise at least one of the group consisting of system manufacturer, model, motherboard type, bus information, and adapter information (Chang's design allows for the server management application to access the motherboard (column 2, lines 38-44, Chang). Since the motherboard can be accessed, its attributes can be obtained hence, the motherboard type can be obtained. In addition for server management applications to function properly, attributes of the client must be obtained; any of the attributes claimed are reasonable attributes that could be claimed by many server management applications).

10. With regards to claim 9, Chang teaches a method where said adapter information comprises information about adapter orientation within a system bus of said client computer (For a server management application within the server in Chang's design to function properly, it must know details concerning the client machines it is dealing with. Chang's disclosure states that an advantage of his design is the ability for "remote software installation, distribution, metering and diagnostics." In addition, it offers the ability for configuration management. Chang's disclosure further states the design offers "workstation recovery" and "critical node monitoring" (column 3, lines 25-33, Chang). With a design that allows for the server management application within the server to monitor such various aspects of the client, it is inherent that the client's

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adapter information (including that comprising information about the adapter's orientation within a system bus) would be available to the server management application as well).

11. With regards to claim 10, Chang teaches a method where the client computer comprises a file system and wherein the method further comprises the step of verifying said file system of said client computer (Operating systems contain file systems and Chang's design calls for client machines to have operating systems (column 2, line 20, Chang). In addition, Chang's design allows for workstation crash recovery (column 3, line 31, Chang). For workstation crash recovery to function properly, files within the client must be checked against some form of index of files. Hence the claimed verification process occurs).

12. With regards to claim 11, Chang teaches a method where the verifying of the file system comprises checking the files in said file system against an index file (Operating systems contain file systems and Chang's design calls for client machines to have operating systems (column 2, line 20, Chang). In addition, Chang's design allows for workstation crash recovery (column 3, line 31, Chang). For workstation crash recovery to function properly, files within the client must be checked against some form of index of files. Hence the claimed index file must exist).



13. With regards to claim 12, Chang teaches a method where the index file is retained on the server computer and the step of verifying the file system is executed on the server computer (Operating systems contain file systems and Chang's design calls for client machines to have operating systems (column 2, line 20, Chang). In addition, Chang's design allows for workstation crash recovery (column 3, line 31, Chang). For workstation crash recovery to function properly, it is inherent that files within the client must be checked against some form of index of files. For the recovery of a client's files to occur, the index files must be stored within some storage, which is accessible for copying when needed (such as within the server or client). Furthermore the server management application within the server handles the process of installation, distribution, metering and diagnostics (column 3, lines 31-32, Chang) (as stated above, software is comprised of files and hence processes performed on software can be performed on files). Metering and diagnostics are viewed as being equivalent to verification and hence, the verification of the file system are performed on the server of Chang's design as claimed. Hence the claimed method exists).

14. With regards to claim 13, Chang teaches a method where the index file is retained on the client computer and the step of verifying the file system is executed on the client computer (Operating systems contain file systems and Chang's design calls for client machines to have operating systems (column 2, line 20, Chang). In addition, Chang's design allows for workstation crash recovery (column 3, line 31, Chang). For workstation crash recovery to function properly, it is inherent that files within the client

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be checked against some form of index of files. For the recovery of a client's files to occur, the index files must be stored within some storage, which is accessible for copying when needed (such as within the server or client). Furthermore, it is well known in the art that operating systems have the capability to verify files and the file system).

15. With regards to claim 14, Chang teaches a method where the index file is compressed (File compression requires a file to be rewritten in a different format. Chang's design discloses that an ID (a file) can be encoded (column 2, line 55, Chang). Encoding like compression requires a file to be rewritten in a different format. It would therefore have been inherent to use file compression).

16. With regards to claim 15, Chang teaches a method where files missing from said file system are retrieved from said server computer (Chang's design allows for workstation crash recovery (column 3, line 31, Chang). Workstation crash recovery is a process by which missing files are restored to the client machine by the server management application within the server. Hence missing files are retrieved from the server to the client as claimed).

17. With regards to claim 16, Chang teaches a method where the index file corresponds to the attributes of the client computer (Index files are used as a reference to maintain the correctness of files. In this case the index file serves as a reference to

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files in client machines. If files serve as index files to a client, it is inherent that the files would possess not only information pertaining to the files within the client but also possess information pertaining to the client machine itself. The claim is therefore rejected).

18. With regards to claim 17, Chang teaches a method where files are accessed using the PXE protocol (Chang's design teaches that the server management application can perform pre-boot tasks on the client machine (column 2, lines 65-66, Chang). To perform any task, a type of environment must exist (even for pre-boot tasks). Since the PXE protocol is a pre-boot execution environment, it is viewed as being equivalent to Chang's design which is capable of performing (executing) pre-boot tasks).

19. With regards to claim 18, Chang teaches a method where the contacting step is performed in accordance with the PXE protocol (For any contact step to occur, it is inherent for the step to abide by some protocol as is used for the file accessing. In addition, Chang's design teaches that the server management application can perform pre-boot tasks on the client machine (column 2, lines 65-66, Chang). To perform any task, a type of environment must exist (even for pre-boot tasks). Since the PXE protocol is a pre-boot execution environment, it is viewed as being equivalent to Chang's design which is capable of performing (executing) pre-boot tasks).

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20. With regards to claim 19, Chang teaches a method comprising the step of mounting a remote drive from the server computer to the client computer (Chang's design calls for both server and client machines. The design enables the client and server to communicate between each other (column 4, lines 23-24, Chang). It is inherent that both the server and client machines have drives such as hard drives. Since a client can communicate with a server (which is remote), it is possible for a client to access a server's hard drive. This accessing of a server's hard drive requires mounting and hence the claimed ability to mount a remote drive from the server to the client is viewed as being inherent).

21. With regards to claim 20, Chang teaches a method where the step of executing the management instructions comprises accessing data files on the remote drive (As stated before, Chang's design allows for a server management application within a server. It is inherent that a server has hard drives (which is a type of drive) by which to store data files. This setup is equivalent to the claimed data files located on a remote drive. It was also stated before that Chang's design allows for clients and servers to communicate with one another (column 4, lines 23-24, Chang). This arrangement permits the data files within the server (remote drive) to be accessed as claimed).

22. With regards to claim 42, Chang teaches a method of remotely managing a client computer having a local operating system comprising the steps of:

- Providing an attribute determination program from a server in response to a request from said client computer; executing the attribute determination program on the client computer to identify a plurality of attributes of said client computer prior to said client computer loading the local operating system and to provide said attributes to said server (Chang's design offers the ability for the client to communicate with the server with the server management application within it (column 2, lines 48-52, Chang). This allows for the client to make requests to the server and to have the server respond to a request as claimed. The server management application program within the server can also send updates for the boot files prior to the client machine booting (column 2, lines 65-66, Chang). Such boot file updates is viewed as being equivalent to the tasks performed by the claimed boot configuration program. Furthermore, as stated earlier, an application must be present within the client side and it must be executed, otherwise the client would be unable to send out information to the server);
- Receiving said attributes from said configuration determination program at said server (Chang's design offers the ability for the client to communicate with the server with the server management application within it (column 2, lines 48-52, Chang). This allows for the client to make requests to the server and to have the server respond to a request as claimed);
- Selecting one of a plurality of management instructions for said client computer at said server as a function of said attributes (As stated above,

Chang's design consists of a server management application. For such an application to function properly, it is inherent that it not only contains the claimed management instructions, but also that it select the appropriate management instructions for each client machine. If this step did not exist, a server management application could never properly perform its task); and

- Providing said one of said plurality of management instructions from said server to said client computer prior to booting said local operating system of client computer (As stated above, Chang's design provides for communication between the server and the client machine. This communication is the means by which the server management application can manage the client machine. Hence, the communication is used to send management instructions from the server to the client as claimed).

23. With regards to claim 43, Chang teaches a method where the attributes comprise hardware attributes (Chang's design has client machines with hardware (column 4, lines 10-12, Chang). These can be accessed by the server management application of Chang's design hence, the attributes can comprise of hardware attributes as claimed).

24. With regards to claim 44, Chang teaches a method where the attributes comprise firmware attributes (Chang's design has client machines with firmware (column 4, lines 13-15, Chang). These can be accessed by the server management application of Chang's design hence, the attributes can comprise of firmware attributes as claimed).

25. With regards to claim 45, Chang teaches a method comprising the step of executing said one of a plurality of management instructions at said client computer (Chang's design consists of server management applications. For server management applications to function properly, management instructions sent by the server management applications must execute on the client machines).

26. With regards to claim 46, Chang teaches a method wherein said one of said plurality of management instructions comprises at least one of a plurality of scripts (Chang discloses a design which allows for scripting languages to be used to program client-server operations (column 4, lines 33-35, Chang). Client-server operations are viewed as being equivalent to management instructions).

27. With regards to claim 47, Chang teaches a method wherein at least one of said plurality of scripts is a REXX script (Chang discloses a design which allows for scripting languages to be used to program client-server operations (column 4, lines 33-35, Chang). REXX is a scripting language and hence the claim is rejected).

28. With regards to claim 48, Chang teaches a method wherein at least one of said plurality of scripts is a PERL script (Chang discloses a design which allows for scripting languages to be used to program client-server operations (column 4, lines 33-35, Chang). PERL is a scripting language and hence the claim is rejected).

29. With regards to claim 49, Chang teaches a method wherein at least one of said plurality of scripts is a batch script (Chang discloses a design which allows for scripting languages to be used to program client-server operations (column 4, lines 33-35, Chang). Chang stated no limitations and a batch script is still a form of a scripting language. Hence, the claim is rejected).

30. With regards to claim 51, Chang teaches a method wherein each script comprises instructions for executing one or more tasks in response to the occurrence of at least one event (Chang discloses a design which allows for scripting languages to be used to program client-server operations (column 4, lines 33-35, Chang). Scripts are programmed to perform desired tasks. With that in mind, it is inherent that scripts are capable of responding to events as claimed).

31. With regards to claim 62 Chang teaches a method wherein said client computer comprises a file system and wherein said step of managing said client computer comprises verifying said file system of said client computer (Operating systems contain file systems and Chang's design calls for client machines to have operating systems (column 2, line 20, Chang). In addition, Chang's design allows for workstation crash recovery (column 3, line 31, Chang). For workstation crash recovery to function properly, files within the client must be checked against some form of index of files. Hence the claimed verification process occurs).



32. With regards to claim 63, Chang teaches a method wherein said step of verifying said file system comprises checking the files in said file system against an index file (Operating systems contain file systems and Chang's design calls for client machines to have operating systems (column 2, line 20, Chang). In addition, Chang's design allows for workstation crash recovery (column 3, line 31, Chang). For workstation crash recovery to function properly, files within the client must be checked against some form of index of files. Hence the claimed index file must exist).

33. With regards to claim 64, Chang teaches a method wherein said index file is retained on said server computer and wherein said step of verifying said file system is executed on said server computer (Operating systems contain file systems and Chang's design calls for client machines to have operating systems (column 2, line 20, Chang). In addition, Chang's design allows for workstation crash recovery (column 3, line 31, Chang). For workstation crash recovery to function properly, it is inherent that files within the client must be checked against some form of index of files. For the recovery of a client's files to occur, the index files must be stored within some storage, which is accessible for copying when needed (such as within the server or client). Furthermore the server management application within the server handles the process of installation, distribution, metering and diagnostics (column 3, lines 31-32, Chang) (as stated above, software is comprised of files and hence processes performed on software can be performed on files). Metering and diagnostics are viewed as being equivalent to

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verification and hence, the verification of the file system are performed on the server of Chang's design as claimed. Hence the claimed method exists).

34. With regards to claim 65, Chang teaches a method wherein said index file is retained on said client computer and wherein said step of verifying said file system is executed on said client computer (Operating systems contain file systems and Chang's design calls for client machines to have operating systems (column 2, line 20, Chang). In addition, Chang's design allows for workstation crash recovery (column 3, line 31, Chang). For workstation crash recovery to function properly, it is inherent that files within the client must be checked against some form of index of files. For the recovery of a client's files to occur, the index files must be stored within some storage, which is accessible for copying when needed (such as within the server or client). Furthermore, it is well known in the art that operating systems have the capability to verify files and the file system).

35. With regards to claim 66, Chang teaches a method wherein said index file is compressed (File compression requires a file to be rewritten in a different format. Chang's design discloses that an ID (a file) can be encoded (column 2, line 55, Chang). Encoding like compression requires a file to be rewritten in a different format. It would therefore have been inherent to use file compression).

36. With regards to claim 67, Chang teaches a method wherein files missing from said file system are retrieved from said server computer (Chang's design allows for workstation crash recovery (column 3, line 31, Chang). Workstation crash recovery is a process by which missing files are restored to the client machine by the server management application within the server. Hence missing files are retrieved from the server to the client as claimed).

37. With regards to claim 68, Chang teaches a method wherein said index file corresponds to said attributes of said client computer (Index files are used as a reference to maintain the correctness of files. In this case the index file serves as a reference to files in client machines. If files serve as index files to a client, it is inherent that the files would possess not only information pertaining to the files within the client but also possess information pertaining to the client machine itself. The claim is thus rejected).

38. With regards to claim 69, Chang teaches a method wherein said files are retrieved using the PXE TFTP protocol (Chang's design teaches that the server management application can perform pre-boot tasks on the client machine (column 2, lines 65-66, Chang). To perform any task, a type of environment must exist (even for pre-boot tasks). Since the PXE TFTP protocol is a pre-boot execution environment, it is viewed as being equivalent to Chang's design which is capable of performing (executing) pre-boot tasks).

39. With regards to claim 75, Chang teaches a method comprising the step of mounting a remote volume of said server computer on said client computer (Chang's design calls for both server and client machines. The design enables the client and server to communicate between each other (column 4, lines 23-24, Chang). It is inherent that both the server and client machines have drives such as hard drives. Since a client can communicate with a server (which is remote), it is possible for a client to access a server's hard drive. This accessing of a server's hard drive requires mounting and hence the claimed ability to mount a remote drive from the server to the client is viewed as being inherent).

40. With regards to claim 76, Chang teaches a method wherein the step of executing said management instructions comprises accessing files stored on said remote volume (As stated before, Chang's design allows for a server management application within a server. It is inherent that a server has hard drives (which is a type of drive) by which to store data files. This setup is equivalent to the claimed data files located on a remote drive. It was also stated before that Chang's design allows for clients and servers to communicate with one another (column 4, lines 23-24, Chang). This arrangement permits the data files within the server (remote drive) to be accessed as claimed).

41. With regards to claim 77, Chang teaches a method wherein said client computer comprises a file system and wherein said step of managing said client computer

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comprises verifying said file system of said client computer (Operating systems contain file systems and Chang's design calls for client machines to have operating systems (column 2, line 20, Chang). In addition, Chang's design allows for workstation crash recovery (column 3, line 31, Chang). For workstation crash recovery to function properly, files within the client must be checked against some form of index of files. Hence the claimed verification process occurs).

42. With regards to claim 78, Chang teaches a method wherein files missing from said file system are retrieved from said remote volume (Chang's design allows for workstation crash recovery (column 3, line 31, Chang). Workstation crash recovery is a process by which missing files are restored to the client machine by the server management application within the server. Hence missing files are retrieved from the file system to the client as claimed).

43. With regards to claim 79, Chang teaches a method wherein said step of verifying said file system comprises checking the files in said file system against an index file (Operating systems contain file systems and Chang's design calls for client machines to have operating systems (column 2, line 20, Chang). In addition, Chang's design allows for workstation crash recovery (column 3, line 31, Chang). For workstation crash recovery to function properly, files within the client must be checked against some form of index of files. Hence the claimed index file must exist).

44. With regards to claims 80-82, 86, and 89, Chang teaches a computer readable medium having instructions stored thereon for executing methods of claims 42, 44, 49, 68 and 76 (Chang's design features a hardware component with memory, such as ROM (a computer-readable medium) which is attached to the client machines to permit server management applications within servers to perform management tasks even during the pre-boot stage of the computer's runtime (column 2, lines 38-54, Chang)).

45. With regards to claim 90, Chang teaches a system for managing a client computer over a network, the client computer having a plurality of client computer attributes and a local operating system, the system comprising:

- A database configured to store a plurality of template records, each of said plurality of template records comprising a set of template attributes and a corresponding configuration script (Chang discloses a design which features a database within the server for holding the access control list (ACL) (column 4, line 3, Chang). If the database can hold an access control list, the access control list can contain information concerning the client as claimed. Such information is equivalent to the claimed template records. In addition, ACLs typically do contain multiple records); and
- A server application configured to receive a request from said client computer via said network, to provide a preboot attribute determination program to the client computer in response to the request, to receive said client computer attributes from the preboot attribute determination program executing on the

client computer, to associate said client computer with at least one of said template records by comparing said client computer attributes to said template attributes, and to provide the configuration script corresponding to the associated at least one of said template records to said client computer for execution on said client computer prior to booting a local operating system (As stated above, Chang's design provides for communication between the server and the client machine (column 4, lines 23-24, Chang). This communication allows for the server to receive requests from the clients with information from the client (such as records) as claimed. Plus, Chang's design allows for the use of scripts to create utilities to perform administrative tasks (column 4, lines 33-35, Chang). The claimed tasks of configurations are administrative tasks. In addition, the utilities made from scripts are run on client machines and are sent through the communication (network) established between the client and server (column 4, lines 23-24, Chang). Hence the claimed step of sending programs to the client to and executed on the client exists within Chang's design).

46. With regards to claim 98, Chang teaches a system wherein said records of information comprise attributes of said client computers (As stated above, Chang's design consists of a server management application. For such an application to function properly, it is inherent that it not only contains the claimed management instructions, but it also should select the appropriate management instructions for each

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client machine. If this step did not exist, a server management application could never properly perform its task).

47. With regards to claim 99, Chang teaches a system wherein said attributes comprise DMI attributes (Chang's design has client machines with NICs to allow for interfacing with desktop server management applications (column 4, lines 13-15, Chang). Furthermore, Chang's design consists of a hardware device attached to each client machine to permit access to the client from the desktop management software at any given time (column 2, lines 38-54, Chang). These can be accessed by the server management application of Chang's design hence, the attributes can comprise of DMI attributes as claimed).

48. With regards to claim 100, Chang teaches a system wherein said attributes comprise PCI attributes (PCI is a type of hardware and Chang's design has client machines with hardware (column 4, lines 10-12, Chang). These can be accessed by the server management application of Chang's design hence, the attributes can comprise of PCI attributes as claimed).

49. With regards to claim 101, Chang teaches a system wherein said attributes comprise SMBIOS attributes (SMBIOS is a type of BIOS. Chang's design allows for the server management application within a server to access a client's BIOS (column 2, line 48, Chang). For the server management application to access the BIOS properly, it



must have some means by which to obtain the attributes of the BIOS. Since SMBIOS and BIOS are viewed as being equivalent, the server management application must be able to obtain the SMBIOS attributes).

50. With regards to claim 105, Chang teaches a system for administering a plurality of client computers over a network, the system comprising;

- Means for receiving a boot message from one of said plurality of client computers (Chang discloses a design that allows for server and client machines to communicate with each other (column 4, lines 19-24, Chang). Chang further discloses in his design that the server management application within the server can offer pre-boot updates and allow the client to access the server while the client is booting (column 2, lines 38-67, Chang). With such abilities available in the design, it is inherent that the server management application within the server is able to detect when the client is booting and thus is able to receive boot messages);
- Means for determining attributes of said one of said plurality of client computers prior to booting a local operating system of said one of said plurality of client computers (Since Chang's design allows for pre-boot updates, it is inherent that there exists means for obtaining attributes of clients before they boot);
- (Chang discloses a design that allows for server and client machines to communicate with each other (column 4, lines 19-24, Chang). Chang further

discloses in his design that the server management application within the server can offer pre-boot updates and allow the client to access the server while the client is booting (column 2, lines 38-67, Chang). With such abilities available in the design, it is inherent that the server management application within the server is able to detect when the client is booting and thus is able to receive boot messages. It is well known in the art that messages are simply data. The claimed received boot messages are able to contain data about the client booting. If boot messages are received then it is also inherent that the server management application should be able to detect which client machine the boot message is from (since such information will be contained within the message).

- Means for associating said attributes with an entry in a database to determine administration steps to be performed on said one of said plurality of client computers (Chang discloses a design that allows for server and client machines to communicate with each other (column 4, lines 19-24, Chang). Chang further discloses in his design that the server management application within the server can offer pre-boot updates and allow the client to access the server while the client is booting (column 2, lines 38-67, Chang). With such abilities available in the design, it is inherent that the server management application within the server is able to detect when the client is booting and thus is able to receive boot messages. In addition, Chang discloses that the server with the server management application has a database. A database

stores data in some order and hence has entries. It is thus inherent that the boot messages can be associated with entries within the database); and

- Means for providing said administrative steps to said one of said plurality of client computers for execution prior to booting the local operating system of said one of said plurality of client computers (As stated before, Chang's design allows for boot messages and client computers. The server in Chang's design contains a server management application that is used for performing administrative tasks on client machines. Since boot messages can be received, it is inherent that the administrative steps can be performed in response to boot messages).

51. With regards to claim 107, Chang teaches a system wherein said determining means comprises means for querying hardware and software attributes of one of said plurality of client computers (Chang's design permits the server with the server management application to meter and diagnose client machines (column 3, lines 31-33, Chang). Having the ability to diagnose and meter clients is equivalent to having the ability to determine a client's attributes).

52. With regards to claim 108, Chang teaches a system wherein said querying means comprises means for querying DMI parameters of one of said plurality of client computers (Chang's design has the means by which to monitor nodes, meter and diagnose software, and manage a client machine's configuration (column 3, lines 12-34,

Chang). To perform such tasks, the means by which to query the client about this information must exist. Since Chang's design has the means by which to query a client, it is inherent that Chang's design also has the means by which to query a client's DMI parameters).

53. With regards to claim 109, Chang teaches a system wherein said querying means comprises means for querying PCI parameters of one of said plurality of client computers (Chang's design allows for a client machine's hard drive to be accessed remotely from the server management application (column 3, lines 21-22, Chang). To properly access the hard drive, the server management application must have means by which to query the hard drive. The hard drive like the PCI is a form of hardware. Since Chang's design allows for the querying of a hard drive, it is inherent that it must also enable the means by which to query PCI parameters).

54. With regards to claim 110, Chang teaches a system wherein said querying means comprises means for querying SMBIOS parameters of said one of said plurality of client computers (Chang's design allows the server management application within a server to provide pre-boot services (column 4, lines 47-67). Chang's design also allows the server management application within a server to access the client's hard drive, meter and diagnose software and manage configurations (column 3, lines 12-34, Chang). To properly perform the tasks described, it is inherent that the means by which

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to query a client's BIOS. A SMBIOS is a form of BIOS and thus, Chang's design is considered to allow for the querying of a client's SMBIOS attributes).

55. With regards to claim 111, Chang teaches a method of maintaining files on a client computer having a local operating system and a network interface card, the method comprising the steps of:

- Receiving a boot request at a server computer from said client computer (Chang discloses a design that allows for server and client machines to communicate with each other (column 4, lines 19-24, Chang). Chang further discloses in his design that the server management application within the server can offer pre-boot updates and allow the client to access the server while the client is booting (column 2, lines 38-67, Chang). With such abilities available in the design, it is inherent that the server management application within the server is able to detect when the client is booting and thus is able to receive boot messages);
- Providing a response to said boot request from said server to said client via said network interface card, wherein said response comprises a file checking program configured to be executed on said client computer prior to booting said local operating system (As stated before, Chang's design allows for boot messages and client computers. The server in Chang's design contains a server management application that is used for performing administrative tasks on client machines. The server management application within the

server is capable of receiving boot messages. Since boot messages can be received, it is inherent that the administrative steps can be performed in response to boot messages. In addition, Chang discloses that his design is capable of providing crash recovery (column 3, line 30, Chang). To properly perform the task of crash recovery, it is inherent that a file-checking program be used to first detect if anything is missing. Plus, Chang's design allows for the use of scripts to create utilities to perform administrative tasks (column 4, lines 33-35, Chang). Means exist within Chang's design to send and execute such scripts to the client as claimed, prior to booting);

- Receiving an index of files present on said client computer from said file checking program without booting said local operating system; (As stated above, Chang's design allows for workstation crash recovery. To perform the task of crash recovery properly, it is inherent that some index of files be available to properly detect if files are missing. It would further be inherent that such an index of files be received on the client machine);
- Providing updated files from said server to said client computer based upon said index (As stated above, Chang's design allows for workstation crash recovery. To perform the task of crash recovery properly, it is inherent that updated files be sent from the server to the client based upon an index of files); and
- Instructing said client computer to boot said local operating system after said updated files are received from said server.

56. With regards to claim 112, Chang teaches a method comprising the step of mounting a volume of said server to said client computer (Chang's design calls for both server and client machines. The design enables the client and server to communicate between each other (column 4, lines 23-24, Chang). It is inherent that both the server and client machines have drives such as hard drives. Since a client can communicate with a server (which is remote), it is possible for a client to access a server's hard drive. This accessing of a server's hard drive requires mounting and hence the claimed ability to mount a remote drive from the server to the client is viewed as being inherent).

57. With regards to claim 113, Chang teaches a method wherein said volume is mounted via a network stack located in a ROM on said client computer (Chang's design allows for a server and client to communicate amongst each other (this is a network). As stated before, Chang's design allows the client to mount a volume on the server. The claimed stack in ROM is inherent since various tasks apply stacks in the computing world and a ROM is simply a means for storage of the stack. The task of mounting a volume as claimed would qualify as one of the tasks that would inherently use a stack and ROM, hence the claim is rejected)

58. With regards to claim 114, Chang teaches a method wherein said ROM is a ROM on a network interface card of said client computer (Chang's design features a hardware component that is installed on the LAN card. A LAN card is a network

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interface card (NIC). The hardware component can hold programs and perform permits and helps execute some of the administrative tasks from the server management application within the server. Chang further discloses that the hardware component has ROM as claimed).

59. With regards to claim 115, Chang teaches a method wherein said ROM is a PXE-enabled ROM (PXE-enabled ROM is beneficial for its pre-boot functionality. Chang's design features ROM but also describes how the design can perform administrative tasks prior to loading of the operating system (column 2, lines 46-47, Chang). This functionality is equivalent to that of the PXE-enabled ROM. The claim is therefore rejected).

### ***Claim Rejections - 35 USC § 103***

60. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

61. Claims 21-25, 50, 52-61, 70-74, 93-94 and 116 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang in view of Havekost et al (Pat No.



US005768119A), referred to hereafter as Havekost. Chang discloses a design with server and client machines that can communicate between one another (column 4, lines 23-24, Chang). In addition, Chang teaches how the client files can be checked by the server management application within the server. (In column 7, line 47-53, Chang discloses that the client can be checked to ensure the software is up to date. Software is made of files or could consist of only one file; hence software and files are viewed as being equivalent. Additionally, Chang states in column 3, lines 30-32 how his design allows for workstation recovery, metering and diagnostics; hence the design allows for checks, recovery, metering and diagnostics of files.) Such capabilities make it inherent that an index of some form must exist to enable client files to be checked and recovered. Chang however fails to specify the role of registries within his design.

62. In the same field of endeavor, Havekost discloses a design that uses registries (column 31, line 46-48, Havekost), event objects (object that handle events are viewed as being equivalent to event objects, column 31, lines 53-55, Havekost), template objects (a template that serves as a template for an object is viewed as being equivalent to a template object, column 9, lines 21-22, Havekost) and workstation objects (an attribute object for a client is viewed as being equivalent to a workstation object, column 25, lines 4-10, Havekost). Such objects and registries disclosed can be applied as the objects and registries claimed.

63. Accordingly it would have been obvious to one in the art, at the time the invention was made to have combined the teachings of Chang with those of Havekost, for the purpose of creating a method and apparatus for maintaining a computer system to

enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang).

64. With regards to claim 21, Chang teaches through Havekost a method where said client computer comprises a registry file and wherein the method further comprises the step of verifying said registry file of said client computer (As stated above, Chang teaches a design where server and client machines can communicate with one another. Also previously stated, Chang's design teaches how the client files can be checked by the server management application within the server. Chang's design however fails to describe the checking of the registry file.

Havekost's design discloses the use of a registry database (column 31, line 47, Havekost). A database stores files and hence the existence of registry files is taught. Registry files exist within computers, and both clients and servers are computers.

Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to permit a server to verify the registry files of a client, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

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65. With regards to claim 22, Chang teaches through Havekost a method wherein said step of verifying said registry file comprises checking entries in said registry file against a registry index file (As previously stated, operating systems contain file systems and Chang's design calls for client machines to have operating systems (column 2, line 20, Chang). In addition, Chang's design allows for workstation recovery (column 3, line 31, Chang). For workstation crash recovery to function properly, files within the client must be checked against some form of index of files. Hence the claimed index file must exist. Chang's design however fails to describe the checking of the registry file.

Havekost's design discloses the use of a registry database (column 31, line 47, Havekost). A database stores files and hence the existence of registry files is taught. Registry files exist within computers, and both clients and servers are computers.

Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to permit a server to verify a registry file against a registry index file, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

66. With regards to claim 23, Chang teaches through Havekost a method wherein said registry index file is retained on said server computer and wherein said step of

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verifying said registry file is executed on said server computer (As stated previously, operating systems contain file systems and Chang's design calls for client machines to have operating systems (column 2, line 20, Chang). In addition, Chang's design allows for workstation crash recovery (column 3, line 31, Chang). For workstation crash recovery to function properly, it is inherent that files within the client must be checked against some form of index of files. For the recovery of a client's files to occur, the index files must be stored within some storage, which is accessible for copying when needed (such as within the server or client). Furthermore the server management application within the server handles the process of installation, distribution, metering and diagnostics (column 3, lines 31-32, Chang) (as stated above, software is comprised of files and hence processes performed on software can be performed on files). Metering and diagnostics are viewed as being equivalent to verification and hence, the verification of the file system are performed on the server of Chang's design as claimed. Chang's design however fails to describe the checking of the registry file.

Havekost's design discloses the use of a registry database (column 31, line 47, Havekost). A database stores files and hence the existence of registry files is taught. Registry files exist within computers, and both clients and servers are computers.

Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have both the registry index located at and the verification executed at the server, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary

resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

67. With regards to claim 24, Chang teaches through Havekost a method wherein said registry index file is retained on said client computer and wherein said step of verifying said registry file is executed on said client computer (As previously stated, operating systems contain file systems and Chang's design calls for client machines to have operating systems (column 2, line 20, Chang). In addition, Chang's design allows for workstation crash recovery (column 3, line 31, Chang). For workstation crash recovery to function properly, it is inherent that files within the client must be checked against some form of index of files. For the recovery of a client's files to occur, the index files must be stored within some storage, which is accessible for copying when needed (such as within the server or client). Furthermore, it is well known in the art that operating systems have the capability to verify files and the file system. Chang's design however fails to describe the checking of the registry file.

Havekost's design discloses the use of a registry database (column 31, line 47, Havekost). A database stores files and hence the existence of registry files is taught. Registry files exist within computers, and both clients and servers are computers.

Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have both the registry index located at and the verification executed at the client, for the purpose of creating a method and apparatus for maintaining a computer system to enable the

workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

68. With regards to claim 25, Chang teaches through Havekost a method wherein said registry index file corresponds to at least a portion of said plurality of attributes of said client computer (Index files are used as a reference to maintain the correctness of files. In this case the index file serves as a reference to files in client machines. If files serve as index files to a client, it is inherent that the files would possess not only information pertaining to the files within the client but also possess information pertaining to the client machine itself. Chang's design however fails to describe the checking of the registry file.

Havekost's design discloses the use of a registry database (column 31, line 47, Havekost). A database stores files and hence the existence of registry files is taught. Registry files exist within computers, and both clients and servers are computers.

Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have the registry index file correspond to the said attributes of the said client computer, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

69. With regards to claim 50, Chang teaches through Havekost a method wherein each of said plurality of scripts is associated with a workstation object at said server, wherein said workstation object is associated with said client computer. (Chang discloses a design which allows for scripting languages to be used to program client-server operations (column 4, lines 33-35, Chang). Hence, Chang teaches the use of scripts. Chang's design however fails to describe the use of workstation objects.

Havekost's design discloses the use of a workstation objects (In column 25, lines 7-8, Havekost describes an attribute object created by a client, this is viewed as being equivalent to a workstation object). It is inherent that both servers and clients are computers and hence, these workstation objects can exist in either servers or clients.

The scripts are used to program client-server operations in Chang's design. Havekost discloses that workstations can have objects associated with them. It is therefore inherent that the scripts can be associated with the workstation objects. Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have scripts associated with workstation objects, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

70. With regards to claim 52, Chang teaches through Havekost a method wherein at least one of said templates is associated with said script at said server through an event object. (Chang discloses a design which allows for scripting languages to be used to program client-server operations (column 4, lines 33-35, Chang). Hence, Chang teaches the use of scripts. Chang's design however fails to describe the use of templates and event objects.

Havekost's design discloses the use of templates (column 9, lines 21-22, Havekost) and event objects (column 31, line 54, Havekost).

The scripts are used to program client-server operations in Chang's design. The scripted operations can be created to perform in a desired way such as being associated with templates and event objects. Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have scripts associated with templates through event objects (since the script could be configured that way), for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

71. With regards to claim 53, Chang teaches through Havekost a method wherein at least one of said templates is associated with said script at said server via a workstation group object. (Chang discloses a design which allows for scripting languages to be



used to program client-server operations (column 4, lines 33-35, Chang). Hence, Chang teaches the use of scripts. Chang's design however fails to describe the use of templates.

Havekost's design discloses the use of a workstation objects (In column 25, lines 7-8, Havekost describes an attribute object created by a client, this is viewed as being equivalent to a workstation object). If an object can represent one workstation, it is inherent that an object can represent multiple workstations. A workstation object is thus viewed as being equal to a workstation group object. It is also inherent that both servers and clients are computers and hence, these workstation objects can exist in either servers or clients. Havekost further discloses the use of templates in his design (column 9, lines 21-22, Havekost).

The scripts are used to program client-server operations in Chang's design. Havekost discloses that workstations can have objects associated with them. It is therefore inherent that the scripts can be associated with the templates via a workstation group object. Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have scripts associated with workstation objects, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

72. With regards to claim 54, Chang teaches through Havekost a method wherein at least one of said templates is associated with said script at said server via said attributes of said client computer (Chang discloses a design which allows for scripting languages to be used to program client-server operations (column 4, lines 33-35, Chang). Hence, Chang teaches the use of scripts. In addition, it was stated earlier that Chang's design allows for the client machine's attributes to be accessed by the server management application within the server. Chang's design however fails to describe the use of templates.

Havekost's design discloses the use of templates (column 9, lines 21-22, Havekost).

The scripts are used to program client-server operations in Chang's design. In addition, Chang's design also teaches the use of client attributes. Havekost discloses the use of templates. It is therefore inherent that the scripts can be associated with the templates via the attributes of the client machine. Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have scripts associated with workstation objects, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

73. With regards to claim 55, Chang teaches through Havekost a method wherein said attributes comprise hardware attributes (Chang's discloses a design that features client machines with hardware (column 4, lines 10-12, Chang). These can be accessed by the server management application of Chang's design. Since the server management application can access the client machine, some attributes of the client must be known. These attributes can comprise of hardware attributes as claimed. Chang's design however fails to describe the use of templates.

Havekost's design discloses the use of templates (column 9, lines 21-22, Havekost).

Chang's design teaches the use of client attributes. In addition, Havekost discloses the use of templates. It is therefore inherent that the hardware attributes can be associated with the templates via the attributes of the client machine. Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have hardware attributes associated, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

74. With regards to claim 56, Chang teaches through Havekost a method wherein said attributes comprise at least one of the group consisting of manufacturer, model, motherboard type, bus information and adapter information (Chang's design allows for

the server management application to access the motherboard (column 2, lines 38-44, Chang). Since the motherboard can be accessed, its attributes can be obtained hence, the motherboard type can be obtained. In addition for server management applications to function properly, attributes of the client must be obtained; any of the attributes claimed are reasonable attributes that could be claimed by many server management applications. Chang's design however fails to describe the use of templates.

Havekost's design discloses the use of templates (column 9, lines 21-22, Havekost).

Chang teaches the use of attributes along with other computer information in his design. In addition, Havekost discloses the use of templates. It is therefore inherent that the information regarding manufacturer, model, motherboard type, bus information and adapter can be associated with the templates. Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have hardware attributes associated, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

75. With regards to claim 57, Chang teaches through Havekost a method wherein said attributes comprise PCI attributes (PCI is a type of hardware and Chang's design has client machines with hardware (column 4, lines 10-12, Chang)). These can be

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accessed by the server management application of Chang's design hence, the attributes can comprise of PCI attributes as claimed. Chang's design however fails to describe the use of templates.

Havekost's design discloses the use of templates (column 9, lines 21-22, Havekost).

Chang teaches the use of PCI attributes along with other computer information in his design. In addition, Havekost discloses the use of templates. It is therefore inherent that PCI attributes can be associated with templates. Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have hardware attributes associated, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

76. With regards to claim 58, Chang teaches through Havekost a method wherein said attributes are DMI attributes (Chang's design has client machines with NICs to allow for interfacing with desktop server management applications (column 4, lines 13-15, Chang). Furthermore, Chang's design consists of a hardware device attached to each client machine to permit access to the client from the desktop management software at any given time (column 2, lines 38-54, Chang). These can be accessed by the server management application of Chang's design hence, the attributes can

comprise of DMI attributes as claimed. Chang's design however fails to describe the use of templates.

Havekost's design discloses the use of templates (column 9, lines 21-22, Havekost).

Chang teaches the use of DMI attributes along with other computer information in his design. In addition, Havekost discloses the use of templates. It is therefore inherent that DMI attributes can be associated with templates. Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have hardware attributes associated, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

77. With regards to claim 59, Chang teaches through Havekost a method wherein said attributes are SMBIOS attributes (SMBIOS is a type of BIOS. Chang's design allows for the server management application within a server to access a client's BIOS (column 2, line 48, Chang). For the server management application to access the BIOS properly, it must have some means by which to obtain the attributes of the BIOS. Since SMBIOS and BIOS are viewed as being equivalent, the server management application must be able to obtain the SMBIOS attributes. Chang's design however fails to describe the use of templates.

Havekost's design discloses the use of templates (column 9, lines 21-22, Havekost).

Chang teaches the use of SMBIOS attributes along with other computer information in his design. In addition, Havekost discloses the use of templates. It is therefore inherent that SMBIOS attributes can be associated with templates. Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have hardware attributes associated, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

78. With regards to claim 60, Chang teaches through Havekost a method wherein said providing step and said receiving step are in accordance with the PXE protocol (Chang's design teaches that the server management application can perform pre-boot tasks on the client machine (column 2, lines 65-66, Chang). To perform any task, a type of environment must exist (even for pre-boot tasks). Since the PXE protocol is a pre-boot execution environment, it is viewed as being equivalent to Chang's design which is capable of performing (executing) pre-boot tasks. Chang's design however fails to describe the use of templates.

Havekost's design discloses the use of templates (column 9, lines 21-22, Havekost).

Chang teaches the use of a pre-boot execution environment in his design. In addition, Havekost discloses the use of templates. It is therefore inherent that pre-boot execution environments can be associated with templates. Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have hardware attributes associated, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

79. With regards to claim 61, Chang teaches through Havekost a method wherein said providing step and said receiving step are substantially in accordance with the PXE protocol (Chang's design teaches that the server management application can perform pre-boot tasks on the client machine (column 2, lines 65-66, Chang). To perform any task, a type of environment must exist (even for pre-boot tasks). Since the PXE protocol is a pre-boot execution environment, it is viewed as being equivalent to Chang's design which is capable of performing (executing) pre-boot tasks. Chang's design however fails to describe the use of templates.

Havekost's design discloses the use of templates (column 9, lines 21-22, Havekost).



Chang teaches the use of a pre-boot execution environment in his design. In addition, Havekost discloses the use of templates. It is therefore inherent that pre-boot execution environments can be associated with templates. Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have hardware attributes associated, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

80. With regards to claim 70, Chang teaches through Havekost a method wherein said client computer comprises a registry file and wherein said step of managing said client computer comprises verifying said registry file of said client computer (As stated above, Chang teaches a design where server and client machines can communicate with one another. Also previously stated, Chang's design teaches how the client files can be checked by the server management application within the server. Chang's design however fails to describe the checking of the registry file.

Havekost's design discloses the use of a registry database (column 31, line 47, Havekost). A database stores files and hence the existence of registry files is taught. Registry files exist within computers, and both clients and servers are computers.

Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to permit a

server to verify the registry files of a client, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

81. With regards to claim 71, Chang teaches through Havekost a method wherein said step of verifying said registry file comprises checking entries in said registry file against a registry index file (As previously stated, operating systems contain file systems and Chang's design calls for client machines to have operating systems (column 2, line 20, Chang). In addition, Chang's design allows for workstation recovery (column 3, line 31, Chang). For workstation crash recovery to function properly, files within the client must be checked against some form of index of files. Hence the claimed index file must exist. Chang's design however fails to describe the checking of the registry file.

Havekost's design discloses the use of a registry database (column 31, line 47, Havekost). A database stores files and hence the existence of registry files is taught. Registry files exist within computers, and both clients and servers are computers.

Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to permit a server to verify a registry file against a registry index file, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to

communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

82. With regards to claim 72, Chang teaches through Havekost a method wherein said registry index file is retained on said server computer and wherein said step of verifying said registry file is executed on said server computer (As stated previously, operating systems contain file systems and Chang's design calls for client machines to have operating systems (column 2, line 20, Chang). In addition, Chang's design allows for workstation crash recovery (column 3, line 31, Chang). For workstation crash recovery to function properly, it is inherent that files within the client must be checked against some form of index of files. For the recovery of a client's files to occur, the index files must be stored within some storage, which is accessible for copying when needed (such as within the server or client). Furthermore the server management application within the server handles the process of installation, distribution, metering and diagnostics (column 3, lines 31-32, Chang) (as stated above, software is comprised of files and hence processes performed on software can be performed on files). Metering and diagnostics are viewed as being equivalent to verification and hence, the verification of the file system are performed on the server of Chang's design as claimed. Chang's design however fails to describe the checking of the registry file.

Havekost's design discloses the use of a registry database (column 31, line 47, Havekost). A database stores files and hence the existence of registry files is taught. Registry files exist within computers, and both clients and servers are computers.

Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have both the registry index located at and the verification executed at the server, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

83. With regards to claim 73, Chang teaches through Havekost a method wherein said registry index file is retained on said client computer and wherein said step of verifying said registry file is executed on said client computer (As previously stated, operating systems contain file systems and Chang's design calls for client machines to have operating systems (column 2, line 20, Chang). In addition, Chang's design allows for workstation crash recovery (column 3, line 31, Chang). For workstation crash recovery to function properly, it is inherent that files within the client must be checked against some form of index of files. For the recovery of a client's files to occur, the index files must be stored within some storage, which is accessible for copying when needed (such as within the server or client). Furthermore, it is well known in the art that

operating systems have the capability to verify files and the file system. Chang's design however fails to describe the checking of the registry file.

Havekost's design discloses the use of a registry database (column 31, line 47, Havekost). A database stores files and hence the existence of registry files is taught. Registry files exist within computers, and both clients and servers are computers.

Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have both the registry index located at and the verification executed at the client, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

84. With regards to claim 74, Chang teaches through Havekost a method wherein said registry index file corresponds to said attributes of said client computer (Index files are used as a reference to maintain the correctness of files. In this case the index file serves as a reference to files in client machines. If files serve as index files to a client, it is inherent that the files would possess not only information pertaining to the files within the client but also possess information pertaining to the client machine itself. Chang's design however fails to describe the checking of the registry file.

Havekost's design discloses the use of a registry database (column 31, line 47, Havekost). A database stores files and hence the existence of registry files is taught. Registry files exist within computers, and both clients and servers are computers.

Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have the registry index file correspond to the said attributes of the said client computer, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

85. With regards to claim 93, Chang teaches through Havekost a system further comprising event objects associated with at least one of said template records, wherein said event objects are associated with said configuration scripts such that said configuration scripts are provided to said client computers upon the occurrence of an event (As stated before, Chang's design has server management applications which permit administrators to meter, diagnose and recover files (also stated earlier, software is made of files and the two are considered equivalent) within client machines (column 3, lines 30-32, Chang). To properly perform these tasks, it is inherent that the attributes of the clients being worked on should be accessible to the server management application and that the attributes must exist in the form of files (these are equivalent to the claimed records of information). Since attributes (in the form of files) are accessible

to the server management application, Chang's design contains attribute files.

Furthermore, Chang discloses that his design enables the usage of scripts (column 4, lines 33-35, Chang). Chang's design however fails to disclose the use of event and template objects.

Havekost discloses a design which uses event objects (column 31, lines 53-55, Havekost) and template objects (a template for an object can be a template object) (column 9, lines 21-22, Havekost). Objects can hold information, such as the records of information claimed.

It would have been obvious to one skilled in the art, at the time the invention was made to have combined the teachings of Chang with those of Havekost to create a design that associates event objects with scripts so that the scripts respond to an occurrence of an event, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

86. With regards to claim 94, Chang teaches through Havekost a system wherein said event comprises the booting of one of said client computers (Chang's design discloses how updated files can be transferred to the client by the server management application within the server (column 4, lines 47-67, Chang). As stated before, the server management application can use scripts that run whatever tasks there are

programmed to. Hence, the scripts can be created to respond to an event. The booting of a client machine is an event and Chang's design describes how clients can boot (column 4 lines 47-67, Chang). Hence a script can respond to a boot process. Chang's design however fails to disclose the use of event and template objects.

Havekost discloses a design which uses event objects (column 31, lines 53-55, Havekost) and template objects (a template for an object can be a template object) (column 9, lines 21-22, Havekost). Objects can hold information, such as the records of information claimed.

It would have been obvious to one skilled in the art, at the time the invention was made to have combined the teachings of Chang with those of Havekost to create a design that associates event objects with scripts so that the scripts respond to an occurrence of an event, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

87. With regards to claims 83, 84, 85, 87 and 88, Chang teaches through Havekost a method of a computer readable medium having instructions stored thereon for executing methods of claims 56, 57, 59, 70 and 74 (Chang's design features a hardware component with memory, such as ROM (a computer-readable medium) which is attached to the client machines to permit server management applications within



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servers to perform management tasks even during the pre-boot stage of the computer's runtime (column 2, lines 38-54, Chang). Chang's design however fails to describe the use of templates.

Havekost's design discloses the use of templates (column 9, lines 21-22, Havekost).

Chang teaches the use of a computer readable medium. In addition, Havekost discloses the use of templates. Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to have computer readable medium having instructions stored thereon for executing methods, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

88. With regards to claim 116, Chang teaches through Havekost a method of maintaining a registry on a client computer having a local operating system and a network interface card, the method comprising the steps of:

- Receiving a boot request at a server computer from said client computer (Chang discloses a design that allows for server and client machines to communicate with each other (column 4, lines 19-24, Chang). Chang further discloses in his design that the server management application within the

server can offer pre-boot updates and allow the client to access the server while the client is booting (column 2, lines 38-67, Chang). With such abilities available in the design, it is inherent that the server management application within the server is able to detect when the client is booting and thus is able to receive boot messages. Chang's design however fails to describe the role of the registry file (registry).

Havekost's design discloses the use of a registry database (column 31, line 47, Havekost). A database stores files and hence the existence of registry files is taught. Registry files exist within computers, and both clients and servers are computers.

Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to permit a server to receive a boot request from a client maintaining a registry, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang));

- Providing a registry checking program to the client computer via the network interface card in response to said boot request, wherein said registry checking program is configured to check said registry on said client computer prior to booting said local operating system and to provide a registry response

to said server computer via said network interface card. Chang's design however fails to describe the role of the registry file (registry).

Havekost's design discloses the use of a registry database (column 31, line 47, Havekost). A database stores files and hence the existence of registry files is taught. Registry files exist within computers, and both clients and servers are computers.

Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to permit a server to respond to a boot request from a client maintaining a registry, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang));

- Receiving said registry response at said server from said registry checking program (As stated before, Chang's design allows for boot messages and client computers. The server in Chang's design contains a server management application that is used for performing administrative tasks on client machines. The server management application within the server is capable of receiving boot messages. Since boot messages can be received, it is inherent that the administrative steps can be performed in response to boot messages. In addition, Chang discloses that his design is capable of

providing crash recovery (column 3, line 30, Chang). To properly perform the task of crash recovery, it is inherent that a registry-checking program be used to first detect if anything is missing. Chang's design however fails to describe the role of the registry file (registry).

Havekost's design discloses the use of a registry database (column 31, line 47, Havekost). A database stores files and hence the existence of registry files is taught. Registry files exist within computers, and both clients and servers are computers.

Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to permit a server to receive a registry program from a registry checking program, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang));

- Processing said registry response at said server to verify said registry on said client computer (As stated before, Chang's design allows for boot messages and client computers. The server in Chang's design contains a server management application that is used for performing administrative tasks on client machines. The server management application within the server is capable of receiving boot messages. Since boot messages can be received,

it is inherent that the administrative steps can be performed in response to boot messages. In addition, Chang discloses that his design is capable of providing crash recovery (column 3, line 30, Chang). To properly perform the task of crash recovery, it is inherent that the server be able to verify the registry. Chang's design however fails to describe the role of the registry file (registry).

Havekost's design discloses the use of a registry database (column 31, line 47, Havekost). A database stores files and hence the existence of registry files is taught. Registry files exist within computers, and both clients and servers are computers.

Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to permit a server verify the registry, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)); and

- Providing an updated registry from said server to said client computer in response to said processing step (As stated before, Chang's design allows for boot messages and client computers. The server in Chang's design contains a server management application that is used for performing administrative

tasks on client machines. The server management application within the server is capable of receiving boot messages. Since boot messages can be received, it is inherent that the administrative steps can be performed in response to boot messages. In addition, Chang discloses that his design is capable of providing crash recovery (column 3, line 30, Chang). To properly perform the task of crash recovery, it is inherent that the server provides an updated registry to the client. Chang's design however fails to describe the role of the registry file (registry).

Havekost's design discloses the use of a registry database (column 31, line 47, Havekost). A database stores files and hence the existence of registry files is taught. Registry files exist within computers, and both clients and servers are computers.

Thus it would have been obvious to one skilled in the art at the time of the invention to have combined the teachings of Chang with those of Havekost to permit a server to provide a updated registry to the client, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

- Instructing said client computer to boot said local operating system after said updated registry received from said server.

89. Claims 95-97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang in view of Havekost et al (Pat No. US005768119A), referred to hereafter as Havekost and in further view of Sonderegger et al (Pat No. US005692129A), referenced hereafter as Sonderegger. Chang discloses a design with server and client machines that can communicate between one another (column 4, lines 23-24, Chang). In addition, Chang teaches how the client files can be checked by the server management application within the server. (In column 7, line 47-53, Chang discloses that the client can be checked to ensure the software is up to date. Software is made of files or could consist of only one file; hence software and files are viewed as being equivalent. Additionally, Chang states in column 3, lines 30-32 how his design allows for workstation recovery, metering and diagnostics; hence the design allows for checks, recovery, metering and diagnostics of files.) Such capabilities make it inherent that an index of some form must exist to enable client files to be checked and recovered. Chang however fails to specify the role of objects and directory service applications within his design.

90. In the same field of endeavor, Havekost discloses a design that uses registries (column 31, line 46-48, Havekost), event objects (object that handle events are viewed as being equivalent to event objects, column 31, lines 53-55, Havekost), template objects (a template that serves as a template for an object is viewed as being equivalent to a template object, column 9, lines 21-22, Havekost) and workstation objects (an attribute object for a client is viewed as being equivalent to a workstation object, column

25, lines 4-10, Havekost). Havekost's design however fails to describe the role of directory services applications.

91. Sonderegger discloses a design which features a directory services application (NDS is a type of directory services application, column 5, lines 14-15, Sonderegger). Such a directory services application can serve as a database.

92. Accordingly it would have been obvious to one in the art, at the time the invention was made to have combined the teachings of Chang with those of Havekost and Sonderegger, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang).

93. With regards to claim 95, Chang teaches through Havekost and Sonderegger a system wherein said database is a directory services application (Chang design teaches that databases can be used (column 4, line 3, Chang). Chang however fails to describe the role of objects and directory services applications.

In the same field of endeavor, Havekost discloses a design that features event objects (column 31, lines 53-55, Havekost), template objects (column 9, lines 21-22, Havekost) and workstation objects (column 25, lines 4-10, Havekost). Havekost however does not disclose details about a directory services application.



Sonderegger discloses a design which features a directory services application (NDS is a type of directory services application, column 5, lines 14-15, Sonderegger). Such a directory services application can serve as a database.

Accordingly it would have been obvious to one in the art, at the time the invention was made to have combined the teachings of Chang with those of Havekost and Sonderegger, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang).

94. With regards to claim 96, Chang teaches through Havekost and Sonderegger a system wherein said directory services application is a Netware Directory Services™ directory (Chang design teaches that databases can be used (column 4, line 3, Chang). Chang however fails to describe the role of objects and directory services applications.

In the same field of endeavor, Havekost discloses a design that features event objects (column 31, lines 53-55, Havekost), template objects (column 9, lines 21-22, Havekost) and workstation objects (column 25, lines 4-10, Havekost). Havekost however does not disclose details about a directory services application.

Sonderegger discloses a design which features Netware Directory Services (NDS is a type of directory services application, column 5, lines 14-15, Sonderegger). Such a directory services application can serve as a database.

Accordingly it would have been obvious to one in the art, at the time the invention was made to have combined the teachings of Chang with those of Havekost and Sonderegger, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang).

95. With regards to claim 97, Chang teaches through Havekost and Sonderegger a system wherein said directory services application is a Microsoft Active Directory™ directory (Chang design teaches that databases can be used (column 4, line 3, Chang). Chang however fails to describe the role of objects and directory services applications.

In the same field of endeavor, Havekost discloses a design that features event objects (column 31, lines 53-55, Havekost), template objects (column 9, lines 21-22, Havekost) and workstation objects (column 25, lines 4-10, Havekost). Havekost however does not disclose details about a directory services application.

Sonderegger discloses a design which features a directory services application (NDS is a type of directory services application, column 5, lines 14-15, Sonderegger). Such a directory services application can serve as a database. Microsoft Active Directory like NDS is a directory services application. Hence, the use of one can be substituted by the use of the other.

Accordingly it would have been obvious to one in the art, at the time the invention was made to have combined the teachings of Chang with those of Havekost and Sonderegger, for the purpose of creating a method and apparatus for maintaining a computer system to enable the workstation to communicate with a server on the network and make the necessary resources of the workstation available to a server management application running on the server via the network (column 2, lines 49-52, Chang)).

### ***Response to Remarks***

The arguments filed by the applicant have been thoroughly considered but they are not deemed fully persuasive. It is appreciated that efforts have been made to decrease the number of claims. However, there remains numerous claims, not all of which are felt to effectively describe the claimed invention as being novel. As for the amendments made, most of the changes reflect a reference to the fact that the claimed invention obtains information from a pre-booted client and that the client receives a program before having booted. Chang's design allows for pre-boot diagnostic of the clients and allows for scripts to be sent and executed on the clients. Such scripts can be run from the NIC adapters. Furthermore, the amending of claims to reflect that the computers have NICs and operating systems unfortunately make little impact due to all networked computers having operating systems and a network interface card of some form.


**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Azizul Choudhury whose telephone number is (571) 272-3909. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Harvey can be reached on (571) 272-3896. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AC

  
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